

CLAIM AMENDMENTS

Claim 1. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating current power source, comprising:

a casing,

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a snap action bimetal connected in series to a series circuit of auxiliary winding and positive characteristic thermistor for sensing the heat from the auxiliary positive characteristic thermistor and turning off when reaching a set temperature, and

an enclosed compartment accommodated in the casing, for enclosing the snap action bimetal and auxiliary positive characteristic thermistor.

Claim 2. (Original)

The starter of single-phase induction motor of claim 1, wherein the snap action bimetal is composed of a movable

contact plate for oscillating a movable contact point, a bimetal, and a plate spring of semicircular section interposed between first support point of the movable contact plate and second support point of the bimetal,

the movable contact plate is forced so as to cause the plate spring to push the movable contact point to the fixed contact point side when the second support point is shifted to the leading end position side at low temperature of the bimetal, than the line segment linking the support point of the movable contact plate and the first support point, and

the movable contact plate is forced so as to cause the plate spring to depart the movable contact point from the fixed contact point side when the second support point is shifted to the leading end position side at high temperature of the bimetal, than the line segment linking the support point of the movable contact plate and the first support point.

Claim 3. (Original.)

The starter of single-phase induction motor of claim 1, wherein the snap action bimetal is a bimetal processed by drawing.

Claim 4. (Original)

The starter of single-phase induction motor of claim 1, wherein the snap action bimetal is a bimetal processed by forming in a circular form in the center.

Claim 5. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating-current power source, comprising:

a casing,

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a bimetal connected in series to a series circuit of auxiliary winding and positive characteristic thermistor for sensing the heat from the auxiliary positive characteristic thermistor and turning off when reaching a set temperature,

an enclosed compartment accommodated in the casing, for enclosing the bimetal and auxiliary positive characteristic thermistor, and

a magnet for applying magnetic force to the bimetal so

as to force the contact point to the ON side.

Claim 6. (Currently Amended)

The starter of single-phase induction motor of ~~any one~~ ~~of claims 1 to 5, claim 1,~~ wherein the auxiliary positive characteristic thermistor is contacting with the base of the bimetal.

Claim 7. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating-current power source, comprising:

a casing,

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a temperature sensing magnet for sensing the heat from the auxiliary positive characteristic thermistor and demagnetizing when reaching a set temperature,

a switch connected in series to a series circuit of auxiliary winding and positive characteristic thermistor, and turning on as being attracted by the magnetic force of

the temperature sensing magnet, and turning off by demagnetization of the temperature sensing magnet, and an enclosed compartment accommodated in the casing, for enclosing the switch.

Claim 8. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating-current power source, comprising:

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a temperature sensing magnet for sensing the heat from the auxiliary positive characteristic thermistor and demagnetizing when reaching a set temperature, and

a reed switch connected in series to a series circuit of auxiliary winding and positive characteristic thermistor, and turning on as being attracted by the magnetic force of the temperature sensing magnet, and turning off by demagnetization of the temperature sensing magnet.

Claim 9. (Currently Amended)

The starter of single-phase induction motor of ~~any one~~ one
~~of claims 1 to 8, claim 1,~~ wherein a through-hole is
pierced in a specified position of a conductor plate having
a spring member for connecting electrically while holding
the positive characteristic thermistor by elastic force,
and a fuse is provided by narrowing the width in the outer
circumference of the through-hole.

Claim 10. (Currently Amended)

The starter of single-phase induction motor of ~~any one~~ one
~~of claims 1 to 9, claim 1,~~ further comprising:

a conductor plate having a spring member for
connecting electrically while holding the positive
characteristic thermistor by elastic force,

wherein the spring member has a rectangular opening in
each center of a pair of rectangular plate extending
sideways, a pair of U-sections face to face at the opening
side are formed of a pair of parallel portions and linking
portions for linking the parallel portions, and the pair of
U-section are bent to the inner side to form U-section,

the leading end vicinity of the parallel portions is
bent and projected so that the linking positions may come
to the inner side, and a contacting corner abutting against

the positive characteristic thermistor is formed, and
a slot is formed parallel to the parallel portion in
the contacting corner.

Claim 11. (Currently Amended)

The starter of single-phase induction motor of ~~any one~~
~~of claims 1 to 9, claim 1,~~ further comprising:

a conductor plate having a spring member for
connecting electrically while holding the positive
characteristic thermistor by elastic force,

wherein the spring member has a rectangular opening in
each center of a pair of rectangular plate extending
sideways, a pair of U-sections face to face at the opening
side are formed of a pair of parallel portions and linking
portions for linking the parallel portions, and the pair of
U-section are bent to the inner side to form U-section,

the leading end vicinity of the parallel portions is
bent and projected so that the linking positions may come
to the inner side, and a contacting corner abutting against
the positive characteristic thermistor is formed, and

a notch is formed parallel to the parallel portion in
the contacting corner.

Claim 12. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding, comprising a positive characteristic thermistor connected in series to the auxiliary winding, and a socket terminal for connecting electrically with a detachable connection pin,

wherein the socket terminal has a pair of plates extending sideways in the axial direction of connection pin bent to the inner side, has the leading end formed in an arc shape so as to conform to the columnar shape of the connection pin, and is provided with a connection pin holder having the leading ends spaced from each other, and the connection pin holder is divided into two sections by the slit in the connection pin axial direction and vertical direction, into leading end side first position, and inner side second position.

Claim 13. (Original)

The starter of single-phase induction motor of claim 12, wherein a recess for accommodating the leading end portion of the connection pin penetrating through the connection pin holder is provided in the casing for holding the socket terminal.

Claim 14. (Currently Amended)

The starter of single-phase induction motor of claim
~~12 or 13~~, 12, wherein the leading end side first position
of the connection pin holder is formed so as to hold the
connection pin more softly than the inner side second
position.

Claim 15. (Currently Amended)

The starter of single-phase induction motor of claim
~~12 or 14~~, 12, wherein the leading end side first position
of the connection pin holder is formed so that the length
in the connection pin axial direction may be longer than
the inner side second position.

Claim 16. (Currently Amended)

The starter of single-phase induction motor of claim
~~12 or 14~~, 12, wherein the inner side second position of the
connection pin holder is formed so that the length in the
connection pin axial direction may be longer than the
leading end side first position.

Claim 17. (Currently Amended)

The starter of single-phase induction motor of ~~any one~~
~~of claims 12 to 16~~, claim 12, wherein a V-notch is cut in

the leading end of the inner side second position of the connection pin holder, that is, at the leading end of the pair of plates.

Claim 18. (Currently Amended)

A starter and an overload protective device of single-phase induction motor manufactured by assembling an overload protective device in a starter ~~in any one of~~ claims 12 to 17. of claim 12.

Claim 19. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating-current power source, comprising:

a casing,

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a slow action bimetal connected in series to a series circuit of auxiliary winding and positive characteristic thermistor for sensing the heat from the auxiliary positive characteristic thermistor and turning off when reaching a

set temperature, and

an enclosed compartment accommodated in the casing,
for enclosing the slow action bimetal and auxiliary
positive characteristic thermistor.

Claim 20. (Original)

The starter of single-phase induction motor of claim 19, wherein the auxiliary positive characteristic thermistor is contacting with the base of the slow action bimetal.

Claim 21. (Original)

A starter of single-phase induction motor having main winding and auxiliary winding energized by alternating-current power source, comprising:

a positive characteristic thermistor connected in series to the auxiliary winding,

an auxiliary positive characteristic thermistor connected parallel to the positive characteristic thermistor,

a slow action bimetal connected in series to a series circuit of auxiliary winding and positive characteristic thermistor for sensing the heat from the auxiliary positive characteristic thermistor and turning off when reaching a

set temperature, and

a snap action bimetal connected in series to a series circuit of auxiliary winding, positive characteristic thermistor, and slow action bimetal for sensing the heat from the positive characteristic thermistor and turning off when reaching a specified high temperature.

Claim 22. (Original)

The starter of single-phase induction motor of claim 21, wherein the snap action bimetal is designed not to reset at ordinary temperature.

Claim 23. (Currently Amended)

The starter of single-phase induction motor of claim 21 or 22, 21, wherein the contact point of the slow action bimetal and contact point of the snap action bimetal directly contact with each other,

when the slow action bimetal reaches the set temperature, it is departed from the contact point at the snap action bimetal side, and

when the snap action bimetal reaches the specified high temperature, it is departed from the slow action bimetal side.

Claim 24. (Original)

The starter of single-phase induction motor of claim 23, wherein a stopper is provided for contacting with the leading end of the snap action bimetal, so as not to disturb the operation of the slow action bimetal.

Claim 25. (Currently Amended)

An enclosed motor using a starter ~~in any one of claims~~
~~19 to 24.~~ of claim 19.

Claim 26. (Currently Amended)

An apparatus having an enclosed motor using a starter
~~in any one of claims 19 to 24.~~ of claim 19.